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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/802,609	03/17/2004	Bernard Favre-Bulle	DT-6779	4991

30377 7590 10/14/2005

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EXAMINER

JONES, DIANE ELIZABETH

ART UNIT PAPER NUMBER

2862

DATE MAILED: 10/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/802,609	<b>Applicant(s)</b> FAVRE-BULLE, BERNARD	
	<b>Examiner</b> Diane E. Jones	<b>Art Unit</b> 2862	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 3/17/2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 9-10 is/are rejected.
- 7) ☐ Claim(s) 3-8 and 11 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Drawings*

1. New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application because Figure 4 is missing a labeling system for the blocks in the block diagram. The labeling system should include wording which defines each block.

Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

### *Specification*

2. The disclosure is objected to because of the following informalities: Page 4, Line 7, the phrase "differently frequent" is unclear. The examiner suggests that the phrase be worded "different frequency".

3. Page 5, Line 29 refers to a "bold" guide. The examiner suggests that the word "bolt" should replace the word "bold".

4. Page 9, Lines 12-13, the phrase " $f_n$  represents the starting frequency from  $f_0$  to  $f_{max}$  represents the end frequency" is unclear. The examiner suggests the wording " $f_n$  represents the starting frequency from  $f_0$  to  $f_{max}$  where  $f_{max}$  represents the end frequency".

Appropriate correction is required.

***Claim Objections***

5. The claims are objected to because they include reference characters which are not enclosed within parentheses.

Reference characters corresponding to elements recited in the detailed description of the drawings and used in conjunction with the recitation of the same element or group of elements in the claims should be enclosed within parentheses so as to avoid confusion with other numbers or characters which may appear in the claims. See MPEP § 608.01(m).

6. With respect to Claim 9, the letters listing the steps, i.e. a, b, ..h, must be removed or enclosed in parentheses. In step "g.)", the labels "b.)" and "f.)" must be enclosed in parentheses.

7. Claims 6 and 8 are objected to because of the following informalities:

8. With respect to Claim 6, in Lines 1-3, it is unclear how the evaluation means "detects...and passage". It is suggested that the phrase "and passage" be changed to "and passes".

9. With respect to Claim 8, Line 4 refers to a "bold guide". The examiner suggests that this phrase be changed to read "bolt guide".

Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 1, 2 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reining (6471106B1) in view of Amini (2001/0038287A1)..

12. With respect to Claim 1, the phrase "such as an internal combustion operated setting tool for driving in fastening elements including one of nails, bolts, pins into a magnetizable substance" in the preamble is given no patentable weight as it merely designates the use of the tool and does not include additional limitations.

Reining discloses a manually operated working tool (device for discharging fastening elements, Col. 2, Lines 3-4) having an inductive metal detector assembly (coil placed on nail gun to determine if gun is abutting human flesh or metal, Col. 1, Lines 49-53) with at least one excitation coil arrangement (resonant tank circuit having a coil to produce oscillatory signal, Col. 2, Lines 61-67) and evaluation means (frequency detector (Col. 2, Lines 13-16) and processor (Col. 2, Lines 25-33), where the inductive metal detector system has a means for generating an alternating current for the excitation coil arrangement (oscillator drives the tank circuit, Col. 2, Lines 19-25).

Reining lacks the teaching that the oscillator has at least two consecutive frequencies  $f_n$  from a starting frequency  $f_0$  to an end frequency  $f_{\max}$ .

Amini teaches an inductive metal detector for measuring resistivity (apparatus for measuring resistivity, Page 4, Para. 0063) of formations behind a magnetizable barrier (measuring resistivity through the ferromagnetic casing, Page 4, Para. 0063) with at least one excitation coil arrangement (saturation coil and magnetic flux transmitting coils, Page 4, Para. 0064, Sections 1-2) and evaluation means (receiver coil signals filtered and processed, Page 4, Para. 0064, Sec. 5) wherein the inductive metal detector system has a means for generating an alternating current for the excitation coil arrangement that the oscillator has at least two consecutive frequencies  $f_n$  from a starting frequency  $f_0$  to an end frequency  $f_{\max}$  (oscillating transmitter flux of different sequential frequencies, Page 5, Para 0066) for the purpose of detecting structures behind a magnetizable substance (measuring resistivity through ferromagnetic barrier materials, Page 4, Para. 0063).

It would have been obvious to one skilled in the art at the time of the invention to use the inductive metal detector of Amini as the inductive metal detector of Reining for the purpose of obtaining measurements of objects behind a magnetizable substance to improve determination of hand or metal placement.

13. With respect to Claim 2, Reining and Amini disclose the invention as shown in Claim 1 above, and Amini further teaches that the means for generating the

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frequency sequence is a stepped frequency generator (frequency is stepped, Page 13, Para. 0179).

14. With respect to Claim 9, Amini discloses a method for detecting a second component concealed behind a first magnetizable component using an inductive metal detector assembly (measuring resistivity of a geologic formation through a ferromagnetic Well Casing, Page 1, Para. 4) on a manually operated working tool, wherein the inductive metal detector assembly has at least one excitation arrangement (saturation coil and magnetic flux transmitting coils, Page 4, Para. 0064, Sections 1-2), at least one evaluation coil arrangement (resonant tank circuit having a coil to produce oscillatory signal, Col. 2, Lines 61-67) and evaluation means (receiver coil signals filtered and processed, Page 4, Para. 0064, Sec. 5), including the following processing steps:

a.) Initializing the inductive metal detector assembly (saturation coil transmits low frequency and lowers the permeability of the the ferromagnetic well casing, Page 4, Para. 0064, Sec. 1),

b.). Setting the frequency  $f_n$  within a frequency range of  $f_0$  to  $f_{max}$  (transmitter frequency greater than or equal to the saturation frequency (Page 4, Para. 0064, Sec. 2) then frequency is step increased to the "maximum penetration frequency" (Page 13, Par. 0179),

c.) Generating a magnetic field having the frequency  $f_n$  at the

excitation coil arrangement (oscillating magnetic flux at a specified frequency,

Page 13, Para. 0179),

d.) Receiving a magnetic secondary field at the evaluation coil

arrangement for generating the secondary current (the received signal is monitored, Page 13, Para. 0180),

e.) Frequency spectral evaluation of the secondary current from the

evaluation coil arrangement in the evaluation means (conductivity measured by analyzing the frequency spectral response, Page 7, Para. 0107),

f.) Intermediately storing the detected harmonic frequencies and

amplitudes in the evaluation means (conductivity measured at each new reading to measure the effects at different frequencies, Page 7, Para 0107);

g.) Repeating steps b.) to f.) so long as to  $f_{\max}$  is not reached (stepping frequency until maximum penetration frequency is reached, Page 13, Para. 0179),

h.) Filtering out all frequencies of harmonics that were generated by

magnetization of the manually operated working tool and by the first magnetizable component and using data stored in the evaluation means (nulling system (Page 6, Para. 0087-0100) also adjusting resistivity (Page 15, Para. 0195-0201)),

i.) Comparing the remaining frequency pattern of the harmonics with

patterns stored in the assessment means of two magnetizable components (methods of procedure, using casing permeability and correcting resistivity, Page 15, Para. 0193-0201).



Amini lacks the teaching of a manually operated tool and of passing into an operation ready mode if a second component is detected.

Reining discloses a manually operated working tool (device for discharging fastening elements, Col. 2, Lines 3-4) having an inductive metal detector assembly (coil placed on nail gun to determine if gun is abutting human flesh or metal, Col. 1, Lines 49-53) with at least one excitation coil arrangement (resonant tank circuit having a coil to produce oscillatory signal, Col. 2, Lines 61-67), an evaluation coil arrangement (coil forms part of a sensor circuit, Col. 4, Lines 11-12) and evaluation means (frequency detector (Col. 2, Lines 13-16) and processor (Col. 2, Lines 25-33)) and further teaches passing the manually operated working tool into an operation ready mode, if a second magnetizable component (metal, Col. 1, Line 53) is detected by the inductive metal detector assembly under the first component (nail gun will not operate if hand is in front of it, Col. 1, Lines 49-53). Reining additionally teaches that the tool advantageously operates when directed properly but avoids discharging when the tool is misdirected (Col. 1, Lines 38-42).

Although Reining lacks the teaching that the first component is magnetizable, it would have been obvious for one skilled in the art at the time of the invention to use the inductive metal detector of Amini as the inductive metal detector of Reining to allow detection of a hand or a magnetizable object under a first magnetizable object and advantageously avoid discharge when the tool is misdirected.

15. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Amini and Reining as applied to claim 9 above, and further in view of Nikolich (4483474).

16. With respect to Claim 10, Amini and Reining disclose the invention as shown in Claim 9 above, and Reining additionally teaches that the tool is operated at a high speed (Col. 1, Lines 18-21) but lack the teaching that the manually operated working tool is configured as an internal combustion operated setting tool.

Nikolich teaches a manually operated working tool is configured as an internal combustion operated setting tool (fastener driving tool powered by combustion gases, Col. 2, lines 22-25) for the purpose of portability (Col. 2, Lines 25-29).

It would have been obvious to one skilled in the art at the time of the invention to power the tool of Amini and Reining as in the internal combustion tool of Nikolich to provide portability.

***Allowable Subject Matter***

17. Claims 2-8, and 11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

18. The prior art fails to point out an evaluation coil arrangement around the excitation coil arrangement as required in Claim 3 or the firing unit within the limitations of Claim 7 and the preceding claims.

### ***Conclusion***

19. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Lakin (4379261) teaches detecting cracks in a metallic surface beneath another metallic surface.

Liedtke et al. (6600441 B2) teaches a radar detector on a hand tool with indicator lights to show when object is detected.

Goldfine et al. (6377039, 6420867, 5453689, 6433542 B2) for inductive metal detection with frequency evaluation.

Amini (6628118 B1, 6471106 B1) teaches detecting through ferromagnetic layers.

Nath et al. (2003/0038628 A1) teaches an inductive probe for detecting cracks in layers of conductive airfoils.

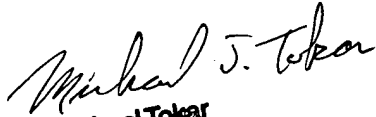
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Diane E. Jones. The examiner can normally be reached on M-F.

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The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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